1: Jenness--15 (1913-16) 1922 Copper Eskimo
116, 136

"It is fortunate for the Copper Eskimos that their land lies in the track of a great caribou migration. In the first days of spring the deer that are scattered all over the barren lands west of Hudson bay begin to move northward, seeking their summer pastures on the shores of the Arctic sea and in the great archipelago beyond. The first herds reach the coast as early as the end of April, and the migration continues well into June, when the ice of the straits usually is too unstable to admit any longer of their passage. In July, August and September the deer scatter out, but they muster again on the south shores of Victoria island in October, and cross the straits on their journey south between the end of that month and early December. By Christmas they have disappeared altogether in most places, though a few herds remain all the winter in certain favoured valleys, notably in the basin of the Coppermine river. But when the caribou have gone the sea is frozen solid again, and the natives can track out the breathing-holes of the seals that abound in these waters.

Seals and caribou are the most abundant game animals. Musk-oxen are found east of the Coppermine river, and in the north of Victoria island. Ground squirrels are numerous in certain areas on the mainland, and foxes are fairly common everywhere: wolverines and wolves, on the other hand, are comparatively rare outside of the Coppermine valley, and only an occasional brown bear is encountered even in the places where its natural foods, berries and roots, are most abundant.

Many migratory game-birds, such as ducks, loons and ptarmigan, have their breeding grounds in this region, but not in such numbers as to influence the economic situation to any marked extent. Fish are much more important. Nearly every lake teems with salmon and lake trout, and innumerable schools of salmon (1) migrate up the rivers and streams each year to spawn. These, with the tom-cod that abound in certain bays, furnish about a third of the total food supply of the natives."

"1. There is no true salmon along the Arctic coast, the fish that is called salmon throughout this memoir being a salmon trout, belonging to the genus Salvelinus."

1: Jenness--20 (1913-16) 1922 Copper Eskimo
116, 136

"....The whole Coppermine valley to its mouth seems to be good caribou country, but within two or three days of the coast the people do not seem to rely on finding them. We ourselves, except for three on the opposite side of the river which we could not get at, saw none until we had left the Coppermine; but from then on we always had plenty and without going out of our way to get them. Caribou offered an abundant supply of food and we had no need to consider fish or other sources of supply. In both Dismal lake and Lake Rouvier, however, fish are known to be plentiful and the Eskimos say that the many small lakes which are abundant throughout the gently rolling tundra country are full of fish. Ducks, loons, bear, etc., are not numerous, but are sometimes used by the people as a source of food."

1: Jenness--22 (1913-16) 1922 Copper Eskimo
116, 136

"Throughout Bathurst inlet there is good tom-cod fishing anywhere close to the land, especially in bays, channels and near big cliffs. The people we met there were living largely on tom-cod helped out by an occasional caribou, a few lake trout and a considerable number of squirrels. They catch few, if any, seal in Bathurst inlet in the spring-time."

2: Stefansson--39 (1908-1912) 1914 Copper Eskimo
116, 136, 221

"At present no people occupy Banks Island in summer although it is known to be fairly well stocked with both musk-oxen and caribou. The caribou, however, are not in such vast numbers here as in Victoria Island, which is filled by the migrations coming from the mainland in the spring although there are few if any caribou there in winter. Banks Island, however, has caribou the year around, for they do not seem to migrate across Prince of Wales Strait to any extent."

2: Stefansson--41 (1908-1912) 1914 Copper Eskimo
136

"The fall of 1910, the caribou migration crossing Coronation Gulf from the north began November ninth, which seems to indicate that the ice had not been strong enough to carry the animals until a day or two before this time, for it is the universal Eskimo account that the animals are found on the south coast of the land each fall waiting for the ice to form."

2: Stefansson--52 (1908-1912) 1914 Copper Eskimo
116, 136, 225

"The method of securing bearded seals is the same essentially as that employed against the common seal, except that two men occasionally join forces, for the animal is huge and powerful and difficult to hold after it is speared. Few bearded seals are secured in winter for they frequent chiefly shore waters, and the seal hunting tribes seldom approach land until towards spring. The stretch of strong current in Dolphin and Union Strait from Lambert Island east to Cape Krusenstern is richer in bearded seals than any other locality accessible to the Copper Eskimo. The ice here is never over two or three inches thick and the seals bask on the ice even in February with the temperature below -40° F. I have here counted over forty bearded seals visible with the naked eye from shore, as many as ten sometimes crawl up through one breathing hole."

2: Stefansson--55 (1908-1912) 1914 Copper Eskimo
116, 136, 224

"The musk-ox plays no part in spring among any Victoria Island tribes directly known to us, nor among any people on the mainland much west of Gray Bay. About Gray Bay and east of it musk-oxen are more numerous and are said to come down towards the sea in the spring, but to what extent they are killed while the snow is still on the ground we do not know. The pursuit of these animals will assume new phases now that guns are about to be introduced in Coronation Gulf. It is said there are some musk-oxen east and north of Minto Inlet, Victoria Island, so the Kanhiryuatjiagmiut may get a few occasionally."

2: Stefansson--55 (1908-1912) 1914 Copper Eskimo
116, 136, 224

"An important food animal in the mainland districts is the marmot (Spermophilus parrii). These awake from their winter hibernation in April and when they first come out of their holes they are rolling in fat and are excellent eating. Many are killed with bows and many are caught at the mouths of their holes with slip nooses of slender braided sinew. It is generally not difficult, except for large parties, to secure enough of these to feed men and dogs. Certain sections, especially rocky barrens, are largely wanting in squirrels, however, while others, such as the flats of Rae River and the lower twenty miles of the Coppermine, are abundantly supplied."

2; Stefansson--55-56 (1908-1912) 1914 Copper Eskimo
116, 136, 224

"It is only on Banks Island and southwestern Victoria Island that polar [56] bears are common at any season. A stray bear may find its way into Dolphin and Union Straits and Coronation Gulf, especially in the spring. One at least was killed by the Puiplirmiut in 1911. I have however, both among the Akuliakattagmiut and in Coronation Gulf, seen grown men who have never seen a live polar bear. Brown bears (Ursus arctos Richardsoni) are quite absent from Victoria Island but most mainland tribes kill one of them now and then, especially the Akuliakattagmiut. If found still in the stupor of hibernation they are easily despatched, but if awake (any time after the middle of April, or even sooner) they are more difficult game than polar bears. One or two good dogs will generally keep a polar bear at bay; it is seldom dogs can hold a barren ground bear. At close quarters, too, they are more dangerous than white bears both to men and dogs, and many a man bears the mark of their claws. They are however attacked single-handed, by hunters armed with only the bow and knife. We were told that the hunter sometimes pays for his venturesomeness with his life; of this, however, we learned no specific instance, though I saw among the Kogluktogmiut a man whose eye had been scratched out and who had been 'confined to the house' the larger part of the summer as a result of the mauling he got."

2: Stefansson--58-59 (1908-1912) 1914 Copper Eskimo
116, 136, 224

"Most of those groups who hunt on the mainland kill a barren ground bear (Ursus richardsoni) now and then. These animals are not found in Victoria Island. A few musk-oxen are killed by the Kanhiryuarmiut only in Banks Island, by the Akuliakattagmiut west and northwest of Dismal Lake, and by the more easterly people in the district towards Kent Peninsula and southward perhaps to the Akilinik River. Otherwise, musk-oxen are extinct from the mainland and Victoria Island in the districts frequented [59] by the groups under discussion. Where there are musk-oxen they are naturally an easy prey for the Eskimo, who surround them with their dogs and usually kill every animal of every band found."

"As to the muskrats, however, the Bear Lake Slaveys say that they, as well as the beaver and the moose are new arrivals north and east of Great Bear Lake."

3: Rasmussen--12-13 (c. 1923) 1932 Copper Eskimo
116, 101, 136

"The Umingmaktôrmiut live in close contact with the Kiluhiktormiut, or the People of Bathurst Inlet, having common sealing grounds at certain times of the year. They hunt the caribou in the period from May to October. They make their way in via Hope Bay, [13] a fairly high mountain country that once abounded with musk oxen -- hence the name of Umingmaktôq: that where musk oxen are many. The herds of caribou that used to reach that country came right in from the regions round the great lakes Pelly and Garry, made their way from there down to the shores of Queen Maud Gulf, whence they scattered out over the big peninsula that lies between Bathurst Inlet and Melbourne Island. In former times the herds were so enormous that it would take them three days to cross the delta of a river, even with the animals constantly on the move. These swarms of animals, undoubtedly numbering into the hundreds of thousands, had last summer entirely failed to put in an appearance in the land of the Musk-Ox People; for since the establishment of the trading post at Kent, and the consequent easy access to guns and ammunition, they have been hunted with such energy that the animals no longer dare to follow their old paths; many families had been unable to procure clothing -- new clothing; others had had to content themselves with skins of marmots; so it was no wonder that these skilful men and women were very anxious about the future.

In this country, almost uninhabitable as it is, what could they do if there were no caribou to be had?"

3: Rasmussen--77 (c. 1923) 1932 Copper Eskimo
116, 136

"Sometimes the caribou migration in June is so enormous that, according to what the people say, the animals are three days in passing a village; the whole country is alive, and one can see neither the beginning of them nor the end--the whole earth seems to be moving. This takes place so early in the year that the caribou are still white-coated."

28: Jenness E-5 (1914-1916) 1946
ND8 Copper Eskimo ND8

fingernail, so that the labour of manufacturing even a large vessel was comparatively slight, never requiring more than a few days. We saw no pots made of any other material, but from Prince Albert Sound we obtained two lamps, one fashioned from a red sandstone, the other from an igneous rock, that could hardly have been hollowed out with adzes in the ordinary way, but must have been shaped by some pecking and grinding process. Their owners knew nothing about their manufacture, and there is good reason to believe that they were not made by the Copper Eskimo, but came in from Hudson Bay.[1]

As stated in the introduction, the natives considered their amygdaloidal copper,[2] which took the place of stone, bone, or ivory in so many of their implements, as merely a peculiar stone that they could work into shape, cold, by hammering with boulders and pebbles (Figure 1). Whether they were able to drill copper before they obtained iron is uncertain; if so, they must have used stone- or copper-pointed drills. In our time they still retained one or two of these copper-pointed drills, but used them, so far as we observed, only on bone, antler, and wood.

Figure 2. Lamp of galena, used for marking skins. IV.D.200. 1/1.

The only important mineral besides copper was iron pyrites, which the Eskimo gathered mainly in the beds of two streams, Kugaluk River in the southwest of Victoria Island and a creek a few miles east of Coppermine River. There were other sources, however, that I failed to record. This mineral served the natives instead of flint and steel for striking fire. They possessed also a few fragments of galena (Figure 2) and litharge, which they used for marking skin and wood; the galena came mostly from Galena Point in Bathurst Inlet, but the source, or sources, of the litharge is not known.

BONE, ANTLER, HORN, IVORY

The caribou and the musk-ox supplied nearly all the bone that the Copper Eskimo required, although for shoeing the runners of their sleds they used rib bones from occasional whales that drifted up on their shores. There was hardly a bone in the two land animals that could not be turned to some purpose. Leg bones were in special demand for skin stretchers, for needle-cases, and for sheathing the wooden ends of harpoon shafts; another type of skin stretcher was fashioned from a caribou or musk-ox shoulder blade. The ribs served for handles of various kinds, for small toggles, pins, and bows for the drilling set. Other toggles were made from the breast or pelvic bones, and the astragalus provided a ready made mouthpiece for the drill.

The caribou alone provided antler, which was just as useful as bone, and interchangeable with that material for most purposes. On the other hand, ivory, which Eskimo elsewhere often substituted for bone and antler, was extremely rare, because neither the narwhal nor the walrus frequents the waters adjacent to the Copper Eskimo territory; consequently, the few ivory objects we saw among the natives almost certainly reached them by trade from the east or the west. Sheep likewise were absent, so that all the horn in use came from the musk-ox. This horn sometimes took the place of bone or antler, but it was especially prized for the manufacture of ladles, scoops, drinking horns, toggles for the sled, and hammers for pounding blubber.

Originally the Copper Eskimo used only four tools, all with copper blades, for shaping bone, antler, and horn, viz., the adze, the whittling knife, the grooving

[1] See p. 68.

[2] For the sources of this copper see Reports of the Canadian Arctic Expedition, vol. XII, pt. A, p. 82; vol. XI, pt. A, p. 58 et seq.

shoes worn by both sexes during the greater part of the year. Steeped in urine for several hours they became waterproof, and served for summer boots, water buckets, quivers, and other articles.

For lines and lashings (which the men made, not the women) it was not necessary to tan the skin; after the removal of the hair the man merely soaked it for a third time in warm water, and cut it in a continuous spiral with his curved whittling knife, while his wife or a friend held the severed parts taut and slightly apart. In cutting he simply pressed the knife, guiding it with his thumb from below, but wherever the strip was very narrow he generally sawed the blade up and down, holding the severed parts in his left hand and guiding the blade with the left index. Newly cut lines were stretched taut between two or more poles out of doors to dry.

The second method of skinning a seal was used only when the owner required a bag with a small opening for storing blubber. The woman then cut the skin around the base of the neck and from the bottom of one hind flipper across to the other. To separate the flesh from the skin—and as far as possible also the blubber—she circled the long snow-knife round between them from each end; then by drawing back the flippers and severing them at the joints with her curved knife, she could draw off the skin over the tail. Subsequently she cut away most of the adhering blubber and sewed up the bottom, leaving the neck open to be tied with a sealskin cord when the poke was filled. In most cases she sewed a strap handle to each end to facilitate handling, as these pokes when filled with blubber weighed from 150 to 200 pounds; if the poke was small, however, she substituted for the straps a short stick thrust through the neck. The Copper Eskimo never skinned an animal through the mouth after the manner of the western Eskimo, or closed their pokes with stoppers.

Although bearded seals were numerous in Dolphin and Union strait, the Eskimo secured very few; and they used for harpoon and sled lines most of the skins of those they did kill, though they were fully aware of the superiority of bearded over foetid sealskins for foot gear. Even their kayaks they covered with the skin of the much commoner foetid seal. Naturally, they treated both kinds of skin in the same way.

Caribou Skins. More important even than sealskins to the Copper Eskimo were the caribou skins from which he made his bedding and the greater part of his clothes, as well as dog harnesses, spring and summer tents, and many other articles that were absolutely indispensable. He skinned the caribou in a way slightly different from that of the ordinary white hunter or from that of the Indians to the south. Beginning at the throat, he cut right down the belly to the tail, then from the hock of each leg up the back as far as the knee, continuing up the inside of the thigh until he reached the incision along the belly. He next punched away the skin from the body down one side, drew out the tail and pulled the skin off down to the feet, where he cut it away at the level of the front of the hoof. Then he slit it down the side of the cheek through the eye and round the base of the horn, and punched it loose with the handle of the hunting knife. Rolling the animal over, he pulled out the skin from below, punched it free of the whole body, and stripped it off down the remaining two legs. A final cut down this cheek similar to the one on the other side, and a few more punches, completed the operation. Thus the skin of the head was removed in three sections that joined at the neck; but the middle strip ran from between the horns to the top of the nose only, as the Eskimo never troubled to remove the skin around the nostrils. Whenever the horns were in the velvet the hunter could jerk the skin over them; but with old bulls whose horns had many branches and roots almost meeting on the forehead, he was often satisfied to strip only the cheeks and leave the skin on the middle of the face untouched. Occasionally he slit from the nose down to midway between the horns, leaving

Caribou leg skins were made into dog harnesses, snow mittens, and winter boots. The ears were used to trim the fronts of trousers at the waist line, or the backs and hoods of coats. The light skins of unborn fawns, or of fawns only a few days old, made serviceable clothes for tiny children, as well as summer caps to protect the head from mosquitoes, though for this last purpose marmot skin was often used instead. There were certain fashions in clothing. The heavy winter outer coat (*qulitaq*) was normally made from autumn skins, an adult's coat from the skins of the larger caribou, and a child's coat from yearlings and fawns. The two everyday coats, the *ilupaq* or inner coat and the *kapitaq* or outer coat, were of very short-haired summer skins; so, also, were the trousers, though for winter sealing it was advisable to have the outer pair of the thicker autumn skin. The same principle applied to the rest of the clothing and to the bedding; wherever warmth was especially requisite, autumn skins were necessary; otherwise the Eskimo preferred the light summer skins.

The spring skins of caribou were thrown away except in emergencies, because they were full of holes from the escaping larvæ of the warble-fly, and the hair was shedding to make way for the summer coat.

Other Skins. Polar-bear skins provided very useful "sleds" in spring, when the frozen mud runners of the ordinary sled melted and dropped off. There seems to be an oil in the hair of the polar-bear skin that renders it impervious to water; hence Copper Eskimo travellers commonly used a mitten or pad of bear skin to ice their sled runners. For the same reason sealers preferred a foot-pad of bear skin to one of caribou skin, which sheds its hair with dampness. The natives of Prince Albert Sound and Minto Inlet sometimes used bear skin for clothing, more especially for trousers, because caribou were less plentiful in their districts than farther south. The animal was skinned in the same way as a caribou.

So few brown bears were killed that there was no established use for their skins. Musk-ox skins, on the other hand, were much sought after for bedding, being laid under the caribou skins on top of willow matting. The northern natives sometimes made heavy coats from them.

Hares, foxes, ermines, and marmots were all skinned in the same way. A cut was made up the back of each hind leg and across to the tail, and the skin pulled off forwards. The forelegs were drawn out and severed at the ankles, and the ears were pulled out with the teeth. The tail of the fox, owing to its exceptional length, was often slit half-way down. Hare skins were used only for towels or socks, but fox skins up to at least a generation ago were sometimes made into coats. One of the dance songs popular in 1915 among the Dolphin and Union Strait Eskimo commemorated its use in this way.

The ermine was prized very highly as an ornamental appendage to the coat; consequently, the sight of one of these animals always occasioned the greatest uproar and excitement in a camp.

Of more value to the Copper Eskimo than all the other small animals was the marmot; from its skin they made coats, trousers, caps, trimmings for the tops of snow mittens and boots, and linings for the soles of caribou skin socks. From the same skin, also, they made tool bags and pouches for holding the fire apparatus. As a rule, however, marmot skin coats and trousers were confined to children, because their use by men suggested a lack of skill in caribou hunting. The natives of Victoria Island obtained their marmot skins by barter, as the animal does not extend beyond the mainland.

The Copper Eskimo killed very few wolves or wolverines until they obtained rifles and traps. We saw one man wearing a heavy coat of white wolf skins, and wolverine skins were probably put to similar use; at all events the natives readily made a sleeping bag from wolverine skins for a member of our expedition. They skinned birds in exactly the same way as small animals, except that

223 They skinned birds in exactly the same way as small animals, except that
237 they tore the skin of a small bird down the legs without cutting it, and, when
825 drawing the skin over the head, held the feet in the teeth instead of tying them
136 to a tent-pole or other convenient object. Loon skins made excellent whisks for beating off the mosquitoes. The bill of the largest species of loon, *Gavia stellata*, was frequently sewn to the top of the dancing cap; and the feet skins [301] of swans, geese, and ducks converted into tinder bags. Every household had its [415] stock of ptarmigan skins for use as dusters, and to wipe the hands and face after [515] eating or handling blubber; one skin served the whole family and all its visitors until every feather was worn out. The Eskimo used other bird skins for the [262] same purpose, especially sea-gull skins, the oily feathers being naturally more suitable for towels than ptarmigan feathers. The skins of fish were usually [294] eaten. The Copper Eskimo, unlike others of their race, never made any real clothing from fish or bird skins, although sometimes they stuffed a few feathers or the skin of a loon inside their sealskin shoes.

lines, harpoon lines, and lashings of various kinds. No doubt the Copper Eskimo in emergencies made use of sinew from other sources, for the Mackenzie Delta natives sometimes use the sinew on the tail of the fox, which is about a foot long and said to be of excellent quality.

After the flesh had been carefully scraped away the sinew was allowed to dry a little; but as prolonged exposure to the heat of the sun rendered it stiff and brittle, it was generally stored away at once in a bag. The value of a slab of back sinew was fairly high everywhere along the Arctic coast.[1] Caribou were very abundant in the Copper Eskimo country until about 1919, but in the absence of linen or cotton thread—which in any case is less suitable for skin garments—sinew was in such great demand that it was constantly traded from one family or group to another.

For ordinary sewing a thin strand was stripped off the slab with the teeth or thumb nail, drawn through the teeth to remove all roughness, and rolled against the cheek to twist it into a single smooth thread. Waterboots, however, called for a stouter three-ply thread, made by the women and girls in the house, where they fastened the ends of the threads to the drying rack, and caught the middle strand between the second and third fingers while they crossed the two outer ones with the thumbs and index fingers. Fishing lines of leg sinew were plaited similarly of three strands, but the harpoon lines, which required to be flat, had from four to eight strands, sometimes even more. Twisting, as with rope, was an unknown art.

Sewing Bags and Baskets. A Copper Eskimo woman without her needle and thread would have been as uncomfortable as a European housewife without her knitting. Sewing was no impediment to gossip: the woman sat on the sleeping skins, her legs doubled under her or stretched out in front, and plied her needle and her tongue at the same rate. Always she sewed from right to left; only a left-handed person sewed in the opposite direction. She held the thimble on the first finger (not on the middle, as we do), and pushed the needle through the skin with the side of the thimble, not with its top, if indeed it had a top. Then she caught the point between the thumb and middle finger, drew the needle out, turned it on its side, and with her thimble behind it pulled through the thread and reinserted the needle for the next stitch. Usually she did not tauten the thread until the second stitch.

There was more sewing to be done at certain seasons than at others. Thus, in the autumn, all the new clothing for the winter had to be finished before the sun disappeared below the horizon for the long winter night. The women then sewed from early morning until late at night, with only brief respites to cook the meals or to pass the time of day with neighbours. A woman who had no children to sew for was, of course, less busy; the mother of a family was obliged not only to make the clothes for the whole household, but to train her girls to be dressmakers also. The latter began their training with odd scraps of skin, which they learned to join with neat close stitches. Later, they mended rents in their own clothing, and made dolls fully clothed from head to foot. Many men could make their own trousers and socks, and even sealskin shoes in an emergency; but only a very few could cut out a well-fitting coat or make a pair of waterboots that would really keep out the water. Even the women never attained great skill in these last-mentioned tasks until long after marriage, and a young wife often sought the assistance of an older relative or friend.

The work-basket of most women was a bag of caribou or some other skin, or else, more rarely, a neatly worked basket of coiled willow twigs held in place with willow-bark stitching (Figures 91, 92). All the baskets that I saw were

[1] In 1914 the price of one slab of reindeer back sinew at Barrow, Alaska, was $1.

[TEXT CONTINUED ON PAGE 90]

one needle, 8 inches long, the splinter was mounted in a wooden handle. The line was of sealskin, generally closed at the far end with a stick of bone, antler, or wood to prevent the fish from slipping off. 227 237 [283]

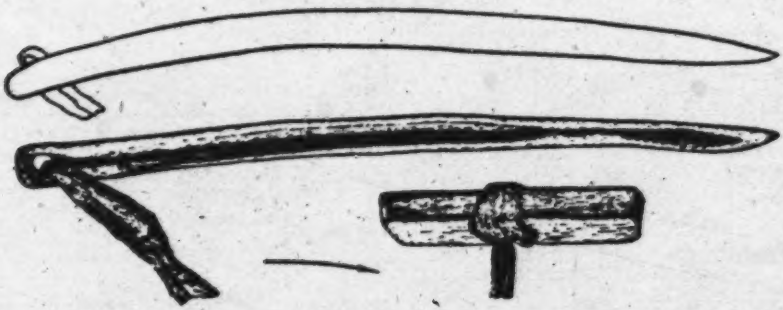

Figure 133. Bone needle for stringing fish. IV.D.461. Approx. 2/3.

Fish Bags. To pack their fish to camp the Eskimo used a bag of sealskin, commonly made by folding in the ends of a whole skin, doubling it over and tying a line to each end. The same bag, laced across, served as a dog-pack. 227 415 287 [492]

Fish Spears. Two varieties of fish spear were employed, the trident and the leister. The leister was preferred for spearing trout and salmon in lakes when they came to nibble at the lure, the trident for the migrating salmon that entered the weirs across streams; but generally a man used whichever weapon happened to be nearest at hand.

The shape of the leister is best seen from the illustration (Figure 134*a*). The handle was simply a long pole, split at the end to receive a barbed, occasionally barbless, point of antler, which was held in place with a lashing of sealskin, or more rarely of sinew. Two prongs facing each other, which sprang open on striking the fish, were invariably of copper or iron, copper, of course, being the original material; they were driven like nails into antler heads, which were bevelled off at the lower ends to fit corresponding ends on wooden extensions. Antler and wood were spliced with sealskin lashing, strengthened at times by bone or antler nails. The wooden extensions were then bevelled off in the same manner and lashed to the shaft, but not nailed, as low ridges at their tips prevented the lashings from slipping off. All these lashings quickly dried up from disuse, and the parts fell asunder except where they were held together by pegs. In a few leisters the side pieces were entirely of antler, not of antler and wood combined. 227 284 321 [325]

The trident (Figure 134*b*) resembled the leister, but had no prongs on the side pieces, which were made entirely of antler, pointed and barbed like the point in the middle. The number of barbs varied; in some cases they were directly opposite, in others staggered, both arrangements occurring at times on the same weapon. 227

Double-pointed spears were sometimes improvised for stabbing sculpins, or the small fish that hide under the stones on the margins of lakes. I have seen two sharpened pieces of bone, and even a European fork, lashed to the end of a walking-stick for this purpose. Naturally, they were dismantled again as soon as the need for them passed. [136] [177]

412
two sharp edges, one of which was slightly higher than the other. One specimen 322
had two slots, the lower more worn than the upper; probably the upper slot had proved unsatisfactory and the wood was large enough to permit a second. I have seen the Eskimo use this tool to adjust the horns of the bow, but it may conceivably have served also to regulate the curvature of the centre piece.

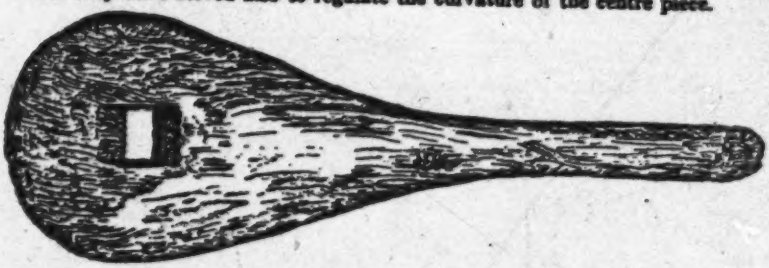

Figure 174. Bow adjuster, of wood. IV.D.94. Approx. 1/3.

Lances

Lances, which were used only for spearing caribou from the kayak, closely 411
resembled one type of arrow. The long tang of the triangular copper blade was [224]
driven into a head of bone, or more usually antler, which was split at the base to form a socket for the end of the wooden shaft, and secured by copper rivets. A specimen is shown in Figure 175.
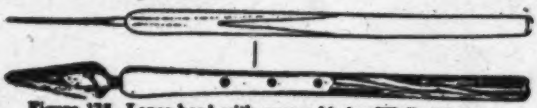
Figure 175. Lance head with copper blade. IV.D.1635. 1/4.

Besides the regular caribou lance, the natives often improvised crude lances [224]
for spearing marmots in their holes, and threw them away when the occasion passed. Figure 176 illustrates the head of one of these marmot lances made of [192]
antler; in use it was lashed to a walking-stick. The natives called it indifferently a "hook" (*nigsik*), or a "lance" (*kapu.n*).

Figure 176. Crude bone point for spearing marmots. IV.D.878. 1/1.

The Copper Eskimo encountered bears so seldom that they did not develop 411
any special weapon against them. Because they dreaded to meet the barren- 224
ground grizzly at close quarters, they shot it with their bows and arrows; but 136
against the polar bear they improvised lances by lashing their two-edged snow knives to long poles.

Sling and Bolas

Though children occasionally flung stones at birds with their tump-lines, 411
the Copper Eskimo, strictly speaking, used neither the sling nor the bolas. They claimed, however, that both weapons were current among the inland Eskimo far to the southeast.

its owner streamed water over the mud to produce the thin coating of ice that reduced friction to a minimum.[1] By the end of April, however, it required protection from the growing warmth; the Eskimo, therefore, draped the sunward sides of their sleds with skins when in motion, and piled snow over the runners when at rest. In May even this protection failed them; gradually the mud melted and fell away.

The tops and bottoms of the runners were roughly parallel except in front, where the bottoms curved upward like a ski. Spaced about a foot apart were the flat crossbars, each lashed down at the ends with a rawhide thong that passed two or three times over the bar and a corresponding number of times through a hole in the runner below. To the front crossbar was attached also the toggle that bore the strain of the traces, a "new-moon-shaped" object of musk-ox horn, slotted in the middle and suspended between the runners by means of a belt of stout rawhide, preferably from the skin of the bearded seal (Figure 177); each end of the belt passed from the inside through a special hole in the runner below the front crossbar and then "button-holed" over the projecting end of that bar. There seemed to be no variation in the shape of this sled toggle, nor did I see any that were not made of musk-ox horn, which indicates that the animals were comparatively numerous a few years ago within the territory of the Copper Eskimo.

Figure 177. Sled toggle, of musk-ox horn. IV.D.191. Approx. 1/4.

In the late spring and early summer, when a sled was difficult to drag over the numerous patches of bare ground, the Copper Eskimo commonly substituted the skin of a seal or polar bear, which glided with much less friction over soil and stones. In the autumn, again, before recovering the sleds they had abandoned late in the spring, they sometimes fashioned runners from skins, which they held in shape with fillings of willow branches and ice, and equipped with crossbars in the usual manner. On one occasion a native even used a block of ice for a sled; he merely rounded the bottom a little and grooved the front end for the attachment of his trace.

Two Eskimo who travelled from Backs River to our station in the winter of 1915-16 dragged sleds that were longer, narrower, and with lower runners than any I saw among the Copper Eskimo, but in all other respects seemed identical. One of them had a square sail of dehaired caribou hide mounted near the front to take advantage of the favourable wind; this, of course, was not an aboriginal invention, but reflected the influence of Europeans.

Sleds rarely carried any ornamentation. We observed only two instances, both of which consisted of a simple Y pattern painted in red and black on the sides of the runners where they began to turn upward.

Harness. Like other Eskimo previous to European contact, the natives around Coronation Gulf hitched their dogs to the sled fanwise, with individual

[1] *See* Reports of the Can. Arct. Exped., vol. XII, pp. 116, 118. The Copper Eskimo never mixed blood with the water, or used blood alone, as was commonly done by their countrymen farther to the east.

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114 which was inspected every second day. It yielded at
• [136] first a few salmon-trout weighing from seven to ten pounds, but when the fall came, nothing but sculpins, a small fish reputed to have a very delicate flavour. It may be that this reputation properly attaches to another species, for all that we captured were so bony that we could never discover any meat. Johansen was pleased with them, however, because they swelled his biological collection beyond all measure; whereas the salmon-trout he had to send into the kitchen after the briefest examination of their colours.

114 Our main hope for a winter supply of fresh meat
136 rested on the caribou which migrated each spring from the barren grounds to the Arctic coast and the islands that lie north of it. The routes they followed varied from year to year, but we confidently expected that some at least of the numerous herds which pastured on Victoria Island during the summer months would cross the strait in the vicinity of Bernard Harbour on their return migration. Palaiyak, who was an experienced hunter, wandered out in search of them nearly every morning. The large herds never came, although individual caribou and a few small herds of three and four strayed within a radius of ten miles. Of these Palaiyak secured his fair share; but our party of six consumed so much meat that only a little could be stored away for the winter. We discovered afterward that the lateness of the freeze-up had caused

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the main body of the caribou to migrate along the southern shores of Victoria Island and cross the strait farther to the eastward.

Seals were as valuable to us as caribou, if only to feed the dogs which, like ourselves, preferred a diet of fresh meat to pemmican; consequently the shooting of seals and ptarmigan became our principal recreation at the end of each day's work. It is not easy to hit the small, round head of a seal that appears just above the water-line fifty or eighty yards away and disappears a few seconds later; the chances of success are particularly slim when you are kneeling in the bow of a small Peterborough canoe that bobs up and down with each wave. Yet we shot over a score of seals before the winter closed in, Palaiyak himself killing six in one day. We fed all the meat and blubber to the dogs, retaining the livers for our own table. Fried seal-liver for breakfast, followed by roast ptarmigan at noon, would delight the heart of any epicure. Even the dogs showed their appreciation, for more than once they broke into the meat-cache and cheated us of these hoarded luxuries.

In spite of these varied activities, scientific work was by no means neglected. Chipman and Cox established the latitude and longitude of our station, placed the meteorological instruments in position, and connected the anemometer with a small electric bulb inside the house so that we could ascertain the direction and

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CHAPTER V

UP THE COPPERMINE RIVER

000
136 AN Arctic winter brings nothing but dreariness and ennui to an ardent zoologist. The birds have migrated to warmer climes, except a few ptarmigan, an occasional raven, and the solitary snowy owl. Bears, squirrels, lemmings, and mice have denned themselves up in their holes; most of the caribou have retreated to the Barren Lands far to the south; and only the fox, the hare, and the wolf contend with man against the winter storms. One may travel a hundred miles without finding a single track to break the monotonous surface of the snow.

000 Anderson, always energetic, had chafed under this forced inactivity ever since his arrival at Christmas. He could do very little zoological work around Bernard Harbour or Coronation Gulf until the spring; so why should he not take a mail out to Fort Norman?—five hundred miles away at the western extremity of Great Bear Lake. Our orders stated that mail should be forwarded to the government on every possible occa-

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sion, but hitherto we had not been able to report our safe arrival at Bernard Harbour and the progress of our scientific work. The first three months of the year, it is true, are not the most favourable for travelling; the days are short, the weather stormy, and the snow, away from the coast, both soft and deep. But even if he were unable to reach Fort Norman, the constant travelling would harden the dogs for their strenuous work in the long, mild days of spring; and the problem of feeding them would really be simplified, since caribou abounded in the valley of the Coppermine River throughout the winter, whereas at Bernard Harbour we had to purchase seal meat from the Eskimos. All things considered, it seemed advisable to undertake the journey. The seaman, Castel, was an efficient companion who could easily be spared from the station; myself and the Eskimo Palaiyak could form a supporting party to freight some of the supplies part of the distance and to establish caches of food against their return; and Johansen could accompany us in the hope of doing some biological work among the spruce forests of the Coppermine Valley.

February 2 arrived, the date set for our departure. About 8 A.M. a bluish tinge began to creep over the snow. It grew perceptibly brighter until we could distinguish the dark shore-line of the harbour, and the island that barred the entrance. In the distance the Liston and Sutton Islands appeared as a thin black

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as a notable landmark in the otherwise featureless shore-line. Farther east was a low stone monument set up by Sir John Richardson's party nearly seventy years before, although from its appearance it might have been standing but a few months. Time's ravages work slowly in the Arctic; M'Clintock's expedition to Melville Island in 1853 discovered hardly a trace of moss on the tracks of Sir Edward Parry's carts that had passed over the tundra in 1820.

We encountered our first caribou in Richardson Bay, near the mouth of the Coppermine River, where a herd of about a hundred were grazing on a ridge overlooking the frozen sea. Anderson and Palaiyak pursued them and shot three. We cached part of the meat under the largest boulders we could find; but since the wolverines would dislodge a stone that two of us could hardly lift, we covered the boulders with snow, and converted the snow into ice by pouring water over it. We hoped by this means to outwit the crafty animals and preserve a small stock of meat for Anderson's return journey. But they proved too much for us; they tunnelled under the surrounding snow and entered the cache from below, as we discovered a fortnight later.

Every hunter in the North develops a taste for the marrow in the leg-bones of the caribou; so it was not surprising that Anderson, Johansen, and myself, sitting round the camp-stove that night, should pile two dozen bones in our midst, and proceed to crack them on stone

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three miles from Bloody Fall, where Hearne, the first white man to behold the northern ocean, witnessed the massacre of a whole community of Eskimos by his bloodthirsty bodyguard of Chipewyan Indians.

We, too, had an adventure in this tragic spot, an adventure that savoured of comedy, although it appeared serious enough at the moment. While we were dressing in the morning a tumult arose among the dogs, and Johansen pushed open the flap of the tent to investigate. "Come quickly," he cried; "a big wolf is chewing up the dogs"; and he dashed out to rescue his favourite team leader. We followed, clad only in short breeks and sealskin slippers. The wolf sneaked in front of my sled not ten yards from me, and our rifles lay beyond it. I hurled a large boulder at its head, but it leaped aside, and tried to bury its fangs in my naked leg. I held it off like a dog, gripping the nape of its neck; and it twisted its head around and caught my forearm. Then I tried to throttle it with my left hand, cave-man fashion; but the animal would have mauled me badly, I fear, had it not voluntarily released its grip and slunk away, only to fall from Anderson's bullet. As it was I escaped with a small flesh-wound that, thanks to the germ-free atmosphere of the North, healed almost entirely within a week.

Owing to this accident Anderson decided not to break camp that day, but to utilize the time in caching

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some of the provisions. Palaiyak went out to hunt caribou. He returned in the evening empty-handed, but reported a curious experience exactly like one that had occurred to Sir John Richardson in this neighbourhood. While stalking a herd late in the afternoon Palaiyak noticed five wolves in front of him engaged in the same pursuit. One wolf kept far over to the flank; the others, in horseshoe formation, were driving the herd toward a distant cliff. The animals moved away from him so rapidly that he did not see the issue; but if we had troubled to search in the morning we should probably have found the mangled bones of the caribou at the foot of the cliff, and foxes devouring the last shreds left by the wolves.

Bloody Fall, below which we camped, is a dangerous rapid where the Coppermine River cuts through a dyke of hard diabase rock running parallel to the coast-line. The swift current keeps the river open in the severest winter, but the traveller can usually pass through the gorge on the ice-foot that forms under its western bank. About the fall the ice was piled up in broken masses, and lanes of open water here and there made it impossible to follow the river channel with sled and dog-team. We, therefore, crossed over to the right bank and climbed onto the plateau, where the soft, deep snow compelled us to put on our snow-shoes. Anderson gave a whoop of joy and leaped four feet into the air when he felt the familiar straps around

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botanists were never quite satisfied with his explanation. Johansen now offered a different one. By cutting into the trees he had discovered many dead beetles and their larvæ, even a larva still living. Three or four genera were represented, all known to be a menace to our northern forests, since they sap the strength of the larger branches. The beetles had themselves been killed by abnormally cold weather; but it seemed certain that they, and not fires, were responsible for the destruction of the timber and the recession of the tree-line. Johansen had good reason to be elated at his discovery.

We stayed two days longer in the grove to enable him to continue his researches. Palaiyak went caribou-hunting, for three men and twelve dogs will consume a whole carcass in one day. I spent most of the time cooking the meals, attending to the dogs, and performing the other routine duties incident to camp life. The temperature had fallen as soon as we left the coast, and our mercury thermometer froze at —51° F.; but the atmosphere was calm and dry, and the cold caused us little inconvenience. A brilliant display of parhelia illumined the dark spruce trees that rose straight out of the white snow, and the landscape was surprisingly beautiful after the barren monotony of the sea-coast.

The second afternoon I wandered down to the river to watch the clouds of vapour steaming up from the

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ooo open water, and as I passed through the grove I caught a glimpse of Johansen, poised on snow-shoes, hewing with all his might at one of the largest trees in the vicinity. His hands so tingled with the cold that he often dropped the axe to clap them vigorously against one another or to thaw them inside his fur breeches. But he was whistling cheerfully, willing to lose his fingers rather than forsake his precious beetles.

• 136 Palaiyak reported an abundance of game in the vicinity of our camp; during a single day's hunting he saw two hundred caribou, a wolverine, a red fox, and the tracks of many wolves. We had warned him not to shoot more caribou than we could eat or carry with us on our sleds, and he limited himself to three; but he brought in also two large hares that made a fine mulligan stew.

ooo As soon as Johansen had collected enough specimens we broke camp and started back toward the coast. The sled and toboggan were piled high with meat, but the dogs pulled cheerfully along their old trail, knowing as well as we did that it led to Bernard Harbour. We were looking for no adventures down the river, and experienced none, unless it were the trifling mishap that befell us near Bloody Fall.

136 I have called it a mishap, but Johansen would say a disaster. I was in front, breaking trail up a long ridge. Just as I reached the crest a large herd of caribou began to straggle unconcernedly across our

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path almost within reach of a shotgun. We had all 136
the meat that we could carry, and did not wish to alarm them needlessly; so I cowed my excited dogs into quiescence, and stationed Palaiyak at the handle-bars of the sled to check a run-away. Neither of us thought of Johansen, who plodded wearily behind on his snow-shoes, noticing nothing. But when his team sighted the herd it dashed away so suddenly that the astonished driver had no time even to throw himself on top of the toboggan. The caribou fled; the dogs pursued them, Johansen pursued the dogs, and I watched the stampede through the binoculars. The herd disappeared at last over a distant ridge, and the dogs, losing all zest for a chase where the quarry was no longer in sight, stretched out their panting bodies on the snow and awaited the wrathful Johansen. He wheeled them round and led them back to the trail, their heads drooping penitently, and their tails trailing between their legs. No one ventured a word as the doleful procession drew near; we silently banished the incident into the storehouse of memory and resumed our interrupted march.

It seemed strange to us then that the Coppermine 224
Eskimos did not hunt these caribou during the winter 225
months, instead of watching for hours over the breathing-holes of seals, exposed to every gale that swept the level ice-fields. When we questioned some of them a few days later, they explained that the intense cold

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ing my brief absence. It was now mid-April, and the natives were travelling in easy stages toward the land, allowing a few days between each migration for the women and children to freight forward the pokes of blubber and the men to resume their sealing. All the families had adopted skin tents in place of snow-houses, or, if their tents were still cached on the coast, they roofed circular walls of snow with the skins of caribou and musk-oxen. The camp was mottled with clothing, suspended from sticks, to dry in the warm sun; and at every little snow-flurry the women rushed from the tents to beat the light flakes from each garment before they melted and spoiled the fur. Night and day had merged into one another, the sun disappearing for one hour only at midnight; and the temperature remained fairly constant around 15°F., except at noon, when it mounted at times to the freezing-point.

The younger women, who were as well versed as the men in the peculiar habits of the seal, often went out with the hunters to escape the monotonous care of clothes and blubber. Each seal appeared to have its special territory, like a bird in the nesting season; and every half-hour or so it came to the surface to breathe. In summer, with open water all around, it rose at any place; but when the sea froze in the autumn it could reach the atmosphere only by breaking through the thin sheet of ice that covered its domain. The breathing-holes made at that season remained open

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all winter, for the snow that drifted over them, mantling the whole ice-field, kept them from freezing beyond the power of the animal to break through at its next visit. The seal then remained in this territory, making irregular circuits from one hole to another.

The Eskimo adjusted his hunting to the animal's habits. When his well-trained dog, nosing over the surface, scented the taint of a seal-hole and vigorously scratched up the snow, he drove it back and himself cleared out the cavity with a small scoop. Then from the back of his coat he brought forth an "indicator," a thin stick of bone that resembled a knitting-needle with a small disc near the lower end. He arranged this to float upright in the water, and adjusted the snow around the top until the opening was scarcely visible. Everything was now ready, and, harpoon in hand, he crouched on the lee side of the hole to await his quarry. Sometimes it appeared within a few minutes; sometimes, when it was visiting other holes in the circuit, not for several hours. But when the indicator bobbed rapidly up and down with the air-bubbles he knew that the seal was rising to the surface; and when the indicator jerked suddenly upward he drove his harpoon down through the centre of the hole and clung to the line with all his might.

The days passed pleasantly by. As a member of Ikpuck's household I occupied one edge of his sleeping-platform and stored my supplies on the snow wall

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182 the day, and its light was doubled by reflection from the snow. So man, like the animals, changed his colour
142 with the season. The faces of the Eskimos during the dark days of winter had been as fair as an Englishman's; now they were tanned to the deep rich brown of a southern European. One or two appeared to be darker still, but I strongly suspected that they could be appreciably lightened by a liberal application of soap and water.

372 Ikpuck and I conveyed his blubber pokes to a small
417 island three miles off the coast, where we covered them with boulders to protect them from sea-gulls and foxes. The sea-gulls were easily deterred, but only a well-built cache could keep out the foxes, which worm their way into the smallest crevices. Before open water cut off communication with the shore, however, all animals would leave the island, and nothing could disturb our pokes throughout the summer.

225 Continual sealing began to pall on the Eskimos when the safe disposition of their blubber removed the last
132 excuse for lingering on the sea-ice. The long winter had come to an end, and the midnight sun was shining over their heads. They forgot the monotonous hours of confinement within the dimly lighted huts, when the blizzards raged outdoors and the twilight of noon resembled night rather than day. The earth was
• 136 awakening to life again after its long sleep. Ducks
137 and loons flew overhead, the ptarmigan in the valleys

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were seeking out their mates, and a faint tinge of green had crept into the brown tips of the low dwarf willows that protruded above the snow. In the hills lay countless lakes teeming with trout and salmon, and herds of caribou grazed on the slopes and plains. Soon large pools would form around the margins of the lakes, and the unlocked waters race in foaming torrents to the sea. Everything beckoned us landward, to a joyous life in the open air. There would still be a few more snow-storms, succeeded by fogs and rain; later, dark clouds of mosquitoes would assail us night and day without rest. But there would be many days, too, of mild, clear weather when we could sleep beneath the open sky; and food was abundant everywhere, so that we could roam where we pleased, as free and unfettered as the caribou we hunted.

On May 9 our sleds climbed up the shore near the mouth of a large creek named Okowyarvik. The new life had begun.

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221 133 Lake of Dancing, where we hoped to meet the Tormiat natives from the Great Sound. It was famous not on account of its size—it was even smaller than the lake we had just left—nor for its abundance of fish; but because it lay near the watershed on the highway to the Great Sound, and was encircled by many larger lakes that provided good fishing until midsummer. [361] We set up our tents on one of several old camp-sites around its margin, and settled down to await the Tormiat.

221 During the next six days we scoured all the hills around us, discovering a few caribou, but no natives save two families that had separated from us on the ice a month before. On every excursion we were joined by Leaf, The Runner's wife, who had borrowed her husband's .22 rifle to shoot at ptarmigan. I lent her my own rifle on one occasion when we were stalking a herd of caribou, and she killed a magnificent bull, [251] the finest we saw on Victoria Island. The other women devoted all their time to fishing, and to drying and caching the meat and fish that began to accumulate in camp.

132 Spring was now advancing rapidly; so much snow had melted from the hill-sides that sledding would soon be impossible. At times the temperature rose above 40° F., though it dropped below the freezing-point • 136 again at evening. Ptarmigan were mating in every 857 hollow, and the children launched many an arrow at them with little success.

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them with little success. On May 23 we saw the first Lapland longspur, and three days later flesh-flies, the forerunners of clouds of mosquitoes. In a pool of water at the base of a hill lay a tiny mouse, drowned by a sudden thaw before it could escape from its burrow.

The increasing brownness of the hills made me uneasy. We could discover no trace of the northern natives, though some of them had visited the Lake of Dancing the previous summer. Icehouse, who was a medicine-woman, announced that she would enquire at midnight from her guardian spirits, and our whole party gathered inside the tent to hear the oracle. The spirit of a wolf entered into her, and even thrust its upper canines out of the corners of her mouth; but it spoke in a mystic language that no one could interpret. We thronged anxiously around it, beseeching it to explain; and at last we heard this message:

> "To Big Lake come your Great Sound kinsmen.
> Travel thither with your sleds.
> Before the snow flies turn ye back again."

The oracle was obeyed. By noon our little caravan was slowly threading its way among the hills, heading north-east toward Big Lake. Ikpuck guided the course. The shoeing of frozen mud that once covered the runners of his sled had fallen away at the Lake of Dancing, and the bare wood grated harshly over the snow. My own sled, following behind, glided along

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593 Ikpuck's longing for a son. So their home life was complete.

[152] Nevertheless the Tormiat woman disturbed Ice-house's peace of mind. She shrank from remaining in the same camp with her rival, and entreated Ikpuck to lead back our party to the Lake of Dancing. Ikpuck consulted me, and we agreed to depart on the morrow.

574 535 The natives from the Great Sound joined us in a dance of farewell, and we started on the homeward march.

372 The snow was melting everywhere, and the women, skirting the ridges, filled their bags with dryads to cook our evening meal. We wandered along like bees, sipping at every thimbleful of water that collected [137] in the cracked soil. A few pink saxifrages were open- [136] ing out their blossoms, and Lapland longspurs sang gaily all around. My companions laughed and chattered as, marching steadily, we re-entered the Colville Hills. But when we approached a knoll slightly higher than the others Ikpuck raised his voice and wept 765 shrilly. Yonder, on its crest, lay the bleaching bones of his only brother who had died six years before; and of all his family he alone remained. The whole train wailed aloud in sympathy, the hills echoed their cries, and the frightened longspurs crouched silent in the moss. Slowly our gloomy procession trailed past the fatal site; but when it lay far behind us my companions ceased their wailing and filled the air again with cheerful laughter.

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Some of the smaller ponds had lost their covering of ice, and narrow lanes of water separated the still frozen lakes from their shore-lines. Ducks and loons, returning to their breeding-grounds, sought out old nesting-places in the mossy tundra or on grassy islets in the lagoons. The plumage of the ptarmigan was changing; their breasts preserved a wintry whiteness, but their backs became a faded brown hardly distinguishable from the vegetation around them. The females changed more rapidly than the males, as though nature had designed for them special protection; when they settled on snow their brown backs resembled the moss-covered boulders protruding above the surface, and in the meadows the white of their breasts shone like patches of unmelted snow. Life in many forms surrounded us, but caribou were lacking, for the countless herds that had migrated to Victoria Island from the south were swallowed up in the land. A month before, we had sighted five and six herds daily; now we saw fresh tracks, but rarely a single animal. The cows had dropped their calves in lonely valleys, and were lingering near them until they were strong enough to join the herds; and the bulls were wandering singly, or in twos and threes, here today and gone tomorrow, searching for the richest pastures.

From our camp on the Lake of Dancing we visited all the lakes within a radius of six miles. Our party

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sleeping-gear, spare clothing, and cooking utensils, and the little children their own bedding and whatever else their strength permitted. With the packs lying horizontally across their backs they resembled from a distance dark crosses that crept over the snow, now strung out in irregular formation, now filing one behind another in single line, now clustering together with little movement as the train halted to rest. The dogs trailed behind the women and children, their packs, shaped like saddle-bags, beating against their ribs or grooving continuous furrows in the snow; but they, too, inherited the pioneering blood and adventurous spirit of their masters, and, in spite of their heavy burdens, curled their tails jauntily over their backs and cocked their ears at the alert.

Slowly we filed across Lake Ever-Frozen and deposited our loads on the shore of a deep inlet at its northern end. In a broad pool created by a stream that foamed down the hill-side a red-throated loon gaily dived and rose to the surface again. Ikpuck seized his fish-trident and raced over the ice to spear it; but just as he reached the margin of the pool the ice gave way, and plunged him in water to his waist. The loon flew up, and the mortified hunter returned to the bank to change his clothing. He had stripped off everything but his jacket—like a swallow-tail coat, it reached to his waist in front and hung down in a long tail behind—when a second loon settled in the same

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become, too, more sluggish, for though the lake trout will take the hook at any season of the year, we caught no salmon-trout until the ice began to melt and lanes of open water encircled all the lakes.

Several red-throated loons and Pacific eiders nested in our vicinity. The loons always build on swampy islets or on tiny peninsulas nearly severed from the shore. Each female lays two eggs, but the nests are so close to the water-line that one and even both eggs often become chilled and fail to hatch. Of the young that do hatch some are devoured by hawks, others by lake trout, which are almost as voracious as the pike of more southern waters. Nevertheless the bird is common in every part of the Arctic, so that its longevity must compensate for the low fecundity and heavy death-rate. The eiders build on dry land either near the margins of the lakes or on the hill-sides immediately above; and in their nests we invariably found from four to seven eggs. If every egg hatched, and the offspring continued to breed at the same rate, the population would treble itself within ten years, even discounting the short span of life of the individual bird and the destruction of the young by hawks and lake trout. But other agencies operate to check its increase, not the least active being the white foxes, which prey the more heavily on eider eggs because they are easily discovered and readily accessible. Thus by lowering the fecundity of the loons, and increasing

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136 the mortality of the eiders, nature keeps the numbers in both species within definite limits.

223 The bows and arrows of the Eskimos inflicted but little damage on these water-fowl. I once came upon Parted-Hair after he had vainly discharged all his arrows at a loon that was swimming in the corner of a lake. Using an ice-cake for a raft, and his fish-spear as a pole, he was gathering up the feathered shafts, one by one, as they danced upright in the water, while his step-son and Jennie tried to prevent the bird's flight by racing along the ice-edge and shouting whenever it raised its head above the surface. The chances were all in favour of the loon when I ended the chase with a bullet.

136 [132] The days grew warmer and more pleasant as spring gave place to summer. Yet its coming was not an unmixed blessing, for it hatched out myriads of mosquitoes that rose and fell in the atmosphere like the motes in a sunbeam. How so many could exist was a mystery. Wherever we travelled they hovered around us like bees swarming, and no smudge could keep them at bay. My tent became the common refuge, for its doorway of fine netting resisted all their assaults, though they pattered on the roof like rain. Outside every one wore mittens as in winter, and my companions beat their faces with loon skins as automatically as a band-conductor wields his baton. Only on the ice could we escape the insects, their flight being

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limited to about a quarter of a mile, unless the wind carried them farther. The animals suffered almost as much as ourselves. Our dogs tried to burrow in the ground to protect their feet and noses, and a young bull caribou, blinded by the cloud of mosquitoes that swarmed around its head, trotted within fifty yards of me without noticing my presence.

The warm weather, too, enlarged the lanes of water round the margins of the lakes and increased the difficulty of crossing onto the ice. Ikpuck therefore decided to return to Lake Ever-Frozen, which, from its size, remained ice-bound all or most of the summer. We first packed the dried fish one stage ahead, then returned for the camping-gear, and, thus travelling, reached in four days the eastern end of the lake not far from our old camping-place. The other families in the band had gathered there already, reunited by the same problem of food supply that a few weeks earlier had caused their dispersal.

My two months of practical training should have rendered me a past master in the fishing technique of my companions, but at this lake they taught me a new device. The largest trout always lay deepest, but none of our lines would reach the bottom of the lake. Moreover a long line, if drawn up quickly hand over hand—or wrist over wrist, in true Eskimo fashion—invariably tangles. Ikpuck's method was to lower his line to the last inch, and, when a fish struck, to run back-

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CHAPTER IX

ON THE TRAIL OF THE CARIBOU

• 136 THE caribou or reindeer, for the two are identical, is the camel of the Arctic, the animal that transforms a barren waste into a hospitable dwelling-place for man. Domesticated, it transports his possessions and supplies him with milk; and tame
237 or wild, it furnishes most of his needs. My Eskimos had no knowledge of its domestication, but they made clothing and tents from its fur, straps and lines from the tanned hide, tools and weapons from the bones and antlers, ornaments from the teeth and toes, and thread and cord from the sinew of its back and legs. Every part of the animal thus had its use; but much was often wasted, especially at the end of summer, when the natives had wandered far from their sleds and

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caribou, which had dark coats at this season; they must be the polar bears whose tracks we had seen a few hours before.

"I'll put on my boots and we'll go after them," cried Icehouse. But I answered, "The meat is almost cooked. Let us eat first and then go." The old lady was too excited to think of her cooking. "They are not caribou, are they? You can see that. There are two of them. I saw two." "Put some more wood on the fire," I said. "Oh, but look, they are coming this way. I'll take The Runner's bow and arrows, shall I?" And, unable to keep from laughing, I said, "Never mind the bears. They are a long way off. Let us have our supper." We started at last, Icehouse stumbling and panting behind us, with her son's bow slung over her shoulder. Rapidly but cautiously we climbed each intervening ridge and searched the low land beyond. One mile, two miles, three miles. Now we came in sight of the animals, this time from a nearer vantage-ground. "They are bears, aren't they?" "I don't know. They [134] are in the water." "Look, they are moving." "Confound it, they're swans." "No." "Yes." We approached still nearer till we could doubt no longer. Our bears were only two snow-white swans floating peacefully in the centre of a lake.

The next day, when we least expected them, the bears did appear, approaching a lake on its farther side. Wild turmoil prevailed for a few minutes as we

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a needle-case, and one or two smaller articles mingled with the broken poles of a tent. Although no bones were visible, we knew that some one had died here, that her spirit had gone to its "hunting-ground" with the spirits of the things she had used in life. I picked up the broken tent-poles to carry along for fuel, but laid them down again when my companions reproached me for stealing her shelter. Had I but known, I might have replaced them with miniature poles, for the dead use not the material things, but their spirits, or what we in our philosophical jargon call concepts. So, at least, Icehouse explained to me a fortnight later when, discovering another grave, she substituted a toy lamp for a real one; the deceased woman suffered no loss, and Icehouse gained a vessel of which she stood greatly in need.

It was only the second week in September, but snow that fell incessantly for three days did not melt again, and every lake was solidly bound with ice. Of birds we saw only a few ptarmigan that were already turning white, and two tiny snow-buntings which of all the migratory birds are the first to come and the last to leave. Ducks and geese, sandpipers, plovers and longspurs, all had winged their way to countries that have no winter. Many even of the ptarmigan were moving southward, and the caribou would follow them, my companions said, within the next three or four weeks. Some of the caribou herds would probably

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• 136 gather earlier, and wander near the coast until the freezing of the strait opened up a road to the main-
484 land. Should we wait and intercept them, or travel north into the hills and resume our interrupted fishing? My party chose the former course, and established itself near the mouth of a large creek twelve miles west of Dryad Harbour. But Ikpuck, Icehouse, little Knife-Blade, and myself moved eastward a few miles and settled down nearer our caches.

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226 the female, often returned, to be impaled on his long-handled fish-spear.

224 In the meantime I kept watch for the caribou which now showed signs of migrating. At first they came in small numbers every second or third day; but soon more frequently, until as many as fifteen or twenty passed daily near our camp. Ikpuck, giving up his sealing and fishing, joined me in the chase, and together we shot about forty animals, although we carried to camp only the hides and whatever meat we
257 needed for immediate consumption. Some of the carcasses we cached under heavy stones, others we dropped into shallow ponds where the covering of ice would protect them from the foxes. Those that we buried under stones froze within a few hours, for the cold weather was an admirable refrigerator; and those that we submerged in the icy water preserved equally well, because the ponds were free of bacteria and too shallow for fish. We planned to recover these carcasses, of course, before the water froze to the bottom, or the ice became so thick that we could not extricate them without much labour. I earmarked twelve for the station at Bernard Harbour, where there would be no fresh meat apart from the caribou that might be shot during this migration; all the rest went to my family, who for two months longer had to live on fish and caribou alone.

• 136 Caribou, like salmon-trout, have their breeding sea-

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son early in the winter. We noticed many signs of restlessness in the herds, especially in one that comprised six cows and four bulls. Three of the bulls had just reached maturity; the fourth, the leader of the herd, was a magnificent animal crowned with an enormous pair of branching antlers. It was he who guided their march as they moved quietly along, resting here and there to brush away the snow and nibble at the succulent moss beneath. His younger rivals he kept sternly in the rear, driving them back with a warning stare whenever they stole out on the flank and tried to advance to the front. Once, when he relaxed his guard, one of them pushed rapidly forward and drew the rest of the herd after him; but the leader suddenly charged, and the young upstart, declining battle, fled precipitately to his place again. Yet not always was the conflict refused; my companions had found two skeletons side by side, the antlers so closely interlocked that the embrace had been fatal to both animals.

A fortnight later, when the breeding season was at its height, the leadership was reversed. I watched two caribou, a bull and a cow, wandering alone up a deep valley, the cow in front, the bull following in her footsteps. Every instinct was subordinated to the mating impulse, so that they neither stopped to graze, nor noticed me standing in full view on the ridge above them. One behind the other, they marched slowly

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136 forward and disappeared from view at the head of the valley.

231 The season produced a change even in our dogs. They had lived in harmony throughout the summer, but now jealousy invaded their ranks, and nearly every day witnessed a battle. There were two ringleaders, an old dog so peaceable that we had thought him cowardly, and my good-natured team-leader Tellurak, whom I had never known to start a fight. Tellurak, unlike the other dogs, incurred no risk of injury, for the matted coat of long frizzly hair that enveloped him from head to foot, almost concealing his beady eyes, made him invulnerable to every adversary. If an unfortunate dog did pounce upon him it backed away immediately with a mass of hair between its teeth, and disturbed the camp for several hours with its violent coughs and sneezes.

Tellurak was my team-leader, from necessity only, not because of his outstanding qualities. In dogs as in men, the true leader is born, not made; training may increase his gifts, it cannot produce them. He must possess the intelligence to understand his master's commands, and the will to obey them without question; for the dog that understands, but hesitates to obey, causes more calamities than the numskull. He must be strong and brave, ready at all times to discipline his own team and to champion it against its enemies. More than all, he must possess, both in har-

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few days, and only occasional stragglers appeared in the vicinity. Our comrades to the west, who wished to inspect their caches before returning to the hills, moved over and camped beside us. But the evening after their arrival Icehouse quarrelled with The Chatterbox's wife concerning some blubber that was given to the dogs, and, after exchanging real Billingsgate, reduced her adversary to tears. Ikpuck scolded her and retired to bed. The remainder of the party soon followed his example; but when Icehouse, lingering to the last, crept in beside her husband, he sternly ordered her to sleep in an empty sealskin tent that we used for a kitchen. She protested vehemently, for a cold north wind was blowing and the thermometer nearly at zero. At a repetition of the order she began to dress, but he tore the clothes from her hands and snapped, "Get out." The poor woman, speechless with terror, fled through the tent door naked, and disappeared into the darkness. I said to Ikpuck, "Tell her to come in again. She will freeze to death." He slipped on his jacket and looked inside the cooking-tent. It was empty, nor did he know where she had gone. Five minutes later I found her in the tent of Parted-Hair's family, shivering under a spare caribou robe; but when I urged her to return she answered, "Ikpuck is too angry with me. I am afraid." I assured her that she would suffer no harm, and, returning to my sleeping-bag, told Ikpuck to drop the

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nourished Icehouse wriggled in her bag for several minutes before she tumbled, like an enormous chrysalis, head foremost onto the floor.

We occupied a real snow-hut at the Lake of Dancing, one that had been erected by our companions a week or more before. Here we dismantled our caches of dried meat and dried fish, and recovered my sled, the big spring tent, and all the other things we had deposited at this place in the early days of summer. Foxes, worming their way through sundry chinks and crevices in the stones, had destroyed all the sinew fishing-lines; fortunately we had plenty of cod-line that could take its place. More serious was the destruction of the white-bellied caribou hides from which Icehouse had intended to make some finely ornamented costumes for the winter dances; but I assuaged her grief by promising to purchase other hides for her when the tribes reassembled at the sealing-grounds. We sighted one of the marauding foxes near our camp, and lured it within range by squeaking like a young bird; but Ikpuck's bullet struck only the ground between its legs, and, though deluged with snow, it escaped without injury.

After fishing in various lakes for a few days with little success we overtook our companions at the source of a creek that flows into Dryad Harbour. They had abandoned all further hunting and fishing on the land under the pressure of colder weather and were return-

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products, recommended its adoption in low temperatures as a pocket-handkerchief.

Between the hills and the coast we ran into another wave of migrating caribou, the loiterers who had stayed behind in their summer pasture-grounds until the call of winter became too imperious to disobey. The strait had now frozen, but the ice was weak and dangerous, and the sky showed dark reflections from lanes of open water. No Eskimo was so foolhardy as to venture out more than three or four miles, lest a sudden gale should break the unstable field into a maze of drifting floes; yet there were tracks of caribou on the ice, all pointing south toward the mainland and none returning. My "father" told me that the old bull at the head of each herd steered a zigzag course along the edge of the thicker ice, which he tested at intervals with his forefeet. Evidently these northern caribou possess a special "ice instinct" over and above the instinct of migration; and since experience can create an instinct only when repeated through countless generations, here was definite evidence that for centuries, and even millennia, the caribou have wandered north each spring to pass the summer in the Arctic archipelagoes, and wandered south again to winter on the mainland as soon as the sea froze over in the autumn. Trespassing on unsafe ice doubtless caused many casualties during the earlier centuries of their migrations; but today the instinct seems infallible,

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136 although a sudden storm that shatters the ice-field may still engulf a few animals before they have time to regain the shore.

136 261 The second wave of the migration passed even more quickly than the first, and we found ourselves on a barren coast, cut off from every source of food except the stores that we had accumulated during the months just past. The seals had vanished with the open water, the true fishing-lakes lay back in the hills, and the salmon-trout that Ikpuck had speared in lakes nearer the coast had either ceased to spawn, or were invisible through the crust of snow. Occasionally we sighted two or three ptarmigan, never enough for a single meal; and at the mouth of the creek, three or four feet under the ice, the children speared a few sculpins, and 221 devoured them on the spot. But we had now reached the "doldrum" stage in our voyage, the resting period that intervenes between the intense activity of the caribou hunt and lake-fishing, and the winter sealing on the 221 ice. So with a feeling almost of permanency we estab- 361 lished our tiny settlement on the sea-shore, knowing that we should remain there longer than at any place 342 since the preceding winter. We built our snow-huts with more than usual care, and the women improved them by fixing over the doorways windows of fresh- 221 water ice chipped from a neighbouring lagoon. From 294 morning till night they sat inside beneath their windows, sewing the new garments we needed for the

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my companions, too, found it difficult to keep their 114
cheeks and noses from freezing. We reached land about four o'clock in the afternoon, and set up the tent beside the first stick of driftwood that was large enough to start a fire. I asked Girling, who was nearly as exhausted as myself, to arrange the boxes and sleeping-gear while the rest of us scoured the beach for more wood; but while I was setting up the stove inside the tent the three men started up the dogs and stole away. It was useless to follow them; I lit the fire, melted some snow in our largest cooking-pot, arranged the tent, and waited.

They were absent about two hours, and brought back, not merely wood, but a caribou. This was an unexpected godsend. We had counted on killing three [136] •
or four hares, and perhaps a brace of ptarmigan, but not a caribou, for in early March the herds were usually far inland, just beginning their northward migration. This animal had probably strayed from a herd that had wintered near the coast, like those we had seen the winter before on the Coppermine River. But whatever the explanation, it gave us no concern at the moment; our only interest was in the meat, which tided us over a rather serious emergency.

Girling described the hunt very graphically. He and Patsy, having left their rifles behind, remained with the sled while The Runner stalked the animal from inland. The bullet struck its flank, and it fled

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of the dog for a few days in return for a small butcher-knife.

Shoals of salmon (or, to speak more correctly, salmon-trout), numbering from ten to forty fish in each shoal, had migrated up this stream to spawn in a lake at its source; and a little later in the season young fry, two years old, would migrate from the lake to the sea. The natives captured them by a very simple and effective method. They had built three barriers of stones across the stream, leaving narrow openings in the two that lay nearest the sea and completely closing the highest; whenever a shoal gathered in the upper chamber they blocked its entrance and stabbed the struggling fish with long, three-pointed spears. Nearly a hundred salmon, each weighing from three to twelve pounds, lay spread out on flat boulders around the camp, or hung from horizontal poles; and as many more were cached away under piles of stones. The migration seemed now to have ended, and the two families planned to go inland in search of caribou as soon as they could store away the fish that were still undried.

A larger band of Eskimos who were camped behind Cape Krusenstern had built their weir, not at the mouth of a stream, but in a shallower spot three miles inland near its outlet from a lake. Four and even six shoals of salmon had been ascending each day during the peak of the migration, and a fish that once entered the trap rarely escaped. The shoals then gradually

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123 They then offered us several of their finest prizes and entreated us to stay a few days longer, probably hoping for a continuance of their good luck; but I could not linger. We distributed a few needles and matches among them, and departed while their expressions of goodwill still rang in our ears.

• 136 This renewal of the salmon migration occurred everywhere along the coast, reaching the two families [123] that were taking care of my dog. Apparently it was an unusual phenomenon, for they, too, ascribed it to my intervention. When I had left them they had shouted after me to "will" that more fish should enter their stream. More fish had come, several shoals of [231] them and they were deeply grateful. So they showered their gratitude on the dog, which was so gorged with fat salmon that it could hardly rise to its feet to welcome us.

226 The natives who had been camping close to the station had moved away when the first run of the salmon ended, and only Ikpuck and Icehouse remained in possession of their stream. My parents themselves were about to abandon it when the second run started and deluged them with its rapid succession of shoals, four and even five in one day. Husband and wife toiled incessantly for a week, cleaning and drying the fish and 261 storing them away under piles of stones. Never before had they gathered so abundant a supply against the early winter months, when the caribou disappeared to